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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,838

08/08/2006

Hans-Peter Baer

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4504

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EXAMINER

LOUIE, WAI SING

ART UNIT

PAPER NUMBER

2814

MAIL DATE

DELIVERY MODE

12/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,838	Applicant(s) BAER ET AL.	
	Examiner Wai-Sing Louie	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-31 is/are pending in the application.
- 4a) Of the above claim(s) 24-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/8/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claims 16-23, in the reply filed on 11/9/2007, is acknowledged. The restriction is final. It is suggested that non-elected claims be canceled in the response to this Office Action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-19 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Werner et al. (US 6,725,725) in view of Artmann et al. (US Pub. 2003/0127699).

With regard to claims 16-18, Werner et al. disclose a micromechanical pressure sensor device (col. 4, line 32 et seq. and fig. 1), comprising:

- A substrate 1 (col. 4, lines 43-45 and fig. 1);
- An external oxide layer 6 formed in a laterally external area in the substrate 1 (col. 4, lines 63-65 and fig. 1);
- A diaphragm 3b formed in a laterally internal diaphragm area (col. 4, lines 55-58 and fig. 1). Werner et al. do not disclose the diaphragm having multiple

perforation holes formed in a laterally internal diaphragm area. However, Artmann et al. disclose a diaphragm 8 having regions 5 is porous (Artmann ¶ [0032] and [0035]). Artmann et al. teach a porous semiconductor material having a distinctly larger surface, which has a significantly lower heat conductivity (Artmann ¶ [0012]). Therefore, it would have been obvious to one of ordinary skill in the art to modify Werner's device with the teaching of Artmann et al. to have a porous diaphragm in order to lower the heat conductivity of the diaphragm to provide a more insulative device;

- Werner et al. modified by Artmann et al. disclose a cavity 7 formed in the substrate (Artmann ¶ [0035]), where the diaphragm 3b is suspended in a suspension area of the external oxide layer 6 (fig. 1), which tapers toward connection points of the diaphragm 3b at an acute angle like a wedge shape (fig. 1), and the diaphragm 3b is situated in its vertical height between a top side of the external oxide layer 6 and a bottom side of the external oxide layer 2 (fig. 1).

With regard to claim 19, Werner et al. modified by Artmann et al. disclose the cavity extends to beneath the external oxide outside of the suspension area (Artmann fig. 1c).

With regard to claim 22, Werner et al. modified by Artmann et al. disclose the diaphragm is rectangular (Artmann fig. 3).

With regard to claim 23, Werner et al. do not disclose the diaphragm is situated approximately at a middle vertical height of the of the external oxide layer. Since the applicant has not established the criticality of the location stated and since these locations are in common use in similar devices in the art, it would have been obvious to one of ordinary skill in the art to

use these values in the device. Where patentability is said to be based upon particular chosen dimension or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Allowable Subject Matter

Claims 20-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The prior art of record does not disclose or suggest either in singularly or in combination the following limitations and other elements in the claims:

References Werner et al. and Artmann et al. do not disclose:

- The diaphragm has an internal oxide layer and a nitride layer formed on the internal oxide layer.
- The diaphragm is formed from an internal oxide layer.

Therefore, the above references do not disclose the claimed invention of present application and claim 20 is allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is 571-272-1709. The examiner can normally be reached on 7:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wai-Sing Louie/
Primary Examiner, Art Unit 2814

Wsl
December 17, 2007.